

CLAIMS:

1. Apparatus for interfacing a computer system to a communication line to access a service, the apparatus comprising:
- 5 first I/O means for connection to said computer system;
- second I/O means for connection to the communication line;
- 10 storage means for storing unique identification information and configuration data for configuring the operation of the apparatus to access said service over said communication line;
- processing means for detecting the first time said second I/O means is connected to said communication line and for controlling said second I/O means to connect to a remote configuration system and to transmit said unique identification information in said storage means to the configuration system;
- 15 wherein said processing means is operable to control said second I/O means to receive configuration data from said configuration system, to store said configuration data in said storage means, and to control access to said service by said computer system in accordance with said configuration data.
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2. Apparatus according to claim 1 wherein said computer

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system comprises a local area network (LAN) and said first I/O means comprises a LAN port.

3. Apparatus according to claim 1 or claim 2 wherein
5 said communication line comprises one or more ISDN lines and said second I/O means comprises an ISDN port.

4. Apparatus according to claim 3 wherein said second
I/O means is adapted for connection to an ISDN line
10 having a data channel (D) and a plurality of bearer channels (B).

5. Apparatus according to claim 3 or claim 4 including
at least one plain old telephone service (POTS) interface
15 for connecting a telephone to the or each ISDN line.

6. Apparatus according to claim 1 or claim 2 wherein
said processing means is operable to control said second
I/O means to receive subsequent configuration data from
20 said configuration system, to store said subsequent configuration data in said storage means, and to control subsequent access to said service by said computer system in accordance with said subsequent configuration data.

7. Apparatus according to claim 6 including user
interface means for allowing a user to generate a request
for said subsequent configuration data, said processing

means being responsive to said request to control said second I/O means to transmit said request to said configuration system to cause said subsequent configuration data to be transmitted to said apparatus:

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8. Apparatus according to claim 6 or claim 7 wherein said second I/O port means comprises an ISDN interface for connection to one or more ISDN lines of an ISDN network having one or more data channels permanently connecting said ISDN interface to the ISDN network, and for receiving said subsequent configuration data using said data channel.

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9. Apparatus according to claim 8 wherein said ISDN lines have one or more communication channels and said ISDN interface is adapted to receive said subsequent configuration data also using one or more said communication channels.

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10. Apparatus according to any one of claims 1, 2, 6 or 7 wherein said second I/O means is adapted for connection to a dedicated data communication line.

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11. Apparatus according to any preceding claim wherein said processing means is operable to gather information on the use of said service by said computer system, to process said information to generate summary information,

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and to control said second I/O means to periodically transmit said summary information to a provider of said service.

- 5 12. Apparatus according to claim 11 including real time
clock means, wherein said processing means is operable
to use said real time clock means to gather real time
information on the use of said service by said computer
system.
- 10 *a*
13. Apparatus according to claim 11 or claim 12
including user interface means to allow a user of said
apparatus access to said information.
- 15 14. Apparatus according to claim 13 wherein said user
interface means comprises a further I/O means.
- 20 15. Apparatus according to claim 13 wherein said user
interface means comprises a computer program running on
said processing means to allow a user of said computer
system access to said summary information via said first
I/O means.
- 25 16. Apparatus according to claim 15 wherein said user
interface means comprises said processor means operating
as a web server.

17. Apparatus according to claim 16 wherein said processing means is operable to gather and process said information using machine independent instructions for output to said user.

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18. Apparatus according to any preceding claim including encoding means for encoding said unique identification information before transmission by said second I/O means.

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19. Apparatus according to any preceding claim including decoding means for decoding configuration data received in encoded form by said second I/O means.

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20. Apparatus according to any preceding claim wherein said second I/O means includes a modem for connection to an analogue telephone line.

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21. Apparatus for communicating with a remote system over a network to access a service, the apparatus comprising:

I/O means for connection to the network;

storage means for storing the unique identification information and configuration data for the operation of the apparatus to access said service;

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processing means for detecting the first time said I/O means is connected to said network and for controlling said I/O means to connect to a remote

configuration system and to transmit said unique identification information thereto;

wherein said processing means is operable to control said I/O means to receive configuration data from said configuration system, to store said configuration data in said storage means, and to control access to said service in accordance with said configuration data.

22. Apparatus according to claim 21 wherein said processing means is operable to control said I/O means to receive subsequent configuration data from said configuration system, to store said subsequent configuration data in said storage means, and to control subsequent access to said service in accordance with said subsequent configuration data.

23. Apparatus according to claim 22 including user interface means for allowing a user to generate a request for said subsequent configuration data, said processing means being responsive to said request to control said I/O means to transmit said request to said configuration system to cause said subsequent configuration data to be transmitted to said apparatus.

24. Apparatus according to claim 22 or claim 23 wherein said I/O port means comprises an ISDN interface for connection to one or more ISDN lines of an ISDN network

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having one or more data channels permanently connecting said ISDN interface to the ISDN network, and for receiving said subsequent configuration data using said data channel.

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25. Apparatus according to claim 24 wherein said ISDN lines have one or more communication channels and said ISDN interface is adapted to receive said subsequent configuration data also using one or more said communication channels.

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26. Apparatus according to any one of claims 21 to 25 wherein said processing means is operable to gather information on the use of said service by said computer system, to process said information to generate summary information, and to control said I/O means to periodically transmit said summary information to a provider of said service.

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27. Apparatus according to claim 26 including real time clock means, wherein said processing means is operable to use said real time clock means to gather real time information on the use of said service.

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28. Apparatus according to claim 26 or claim 27 including user interface means to allow a user of said apparatus access to said information.

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29. Apparatus according to claim 28 wherein said user interface means comprises a computer program running on said processing means to allow access to said summary information.

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30. Apparatus according to claim 29 wherein said processing means is operable to gather and process said information using machine independent instructions for output to said user.

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31. Apparatus according to any one of claims 21 to 30 including encoding means for encoding said unique identification information before transmission by said I/O means.

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32. Apparatus according to any one of claims 21 to 31 including decoding means for decoding configuring received in encoded form by said I/O means.

20 33. A configuration system for connection to said apparatus according to any preceding claim via a communication network, said configuration system comprising:

I/O means for connection to said communication
25 network, and for receiving said unique identification information from said apparatus; and
configuration processing means responsive to said

unique identification information to determine configuration data for said apparatus,

wherein said I/O means is adapted to transmit said determined configuration data to said apparatus over said communications network.

34. A configuration system according to claim 33 wherein said configuration processing means is operative to determine said configuration data using said unique identification information, information on the user or users of said apparatus, and information on the level of service required by the user or users.

35. A configuration system according to claim 34 including obtaining means for obtaining said information on the user or users, and said information on the level of service required by the user or users.

36. A configuration system according to claim 35 wherein said obtaining means is adapted to obtain said information on the user or users, said information on the level of service required by the user or users, and expected unique identification information prior to receipt of said unique identification information by said I/O means, and said configuration processing means is operative to determine said configuration data before receipt of said unique identification information using

the information obtained by said obtaining means, to compare the received unique identification information with said expected unique identification, and to cause said I/O means to transmit the configuration data if there is a match in the comparison.

37. A configuration system according to claim 36 including means for storing a plurality of sets of said configuration data for a corresponding plurality of said expected unique identification information for a corresponding plurality of said apparatuses, wherein said configuration system can connect to a plurality of said apparatuses.

38. A configuration system according to any one of claims 33 to 37 wherein said configuration processing means is responsive to a request for said configuration data received by said I/O means from said apparatus to determine said configuration data and control said I/O means to transmit said determined configuration data.

39. A configuration system according to any one of claims 33 to 38 wherein said configuration processing means is operative to automatically determine updated configuration data and to cause said I/O means to transmit said updated configuration data to said apparatus.

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43. Apparatus according to claim 42 including clock

means, said processing means being responsive to said clock to gather said information with respect to time, to process said information periodically, and to cause said second I/O means to transmit said processed information periodically to said remote management system.

44. Apparatus according to claim 42 or claim 43 including user interface means to allow a user of said apparatus access to said information and/or said processed information in said storage means.

45. Apparatus according to claim 44 wherein said user interface means comprises a further I/O means.

46. Apparatus according to claim 44 wherein said user interface means comprises a computer program running on said processing means to allow a user of said computer system access to said information and/or said processed information via said first I/O means.

47. Apparatus according to claim 46 wherein said user interface means comprises said processor means operating as a Web server.

48. Apparatus according to claim 47 wherein said processing means is operable to gather and process said

information for output to said user using machine independent instructions.

49. Apparatus according to any one of claims 42 to 49
5 wherein said second I/O means is adapted to receive configuration data from said management system, and said processing means is operative to process said information in accordance with said configuration data.

10 50. Apparatus for communicating with a remote system over a network to access a service, the apparatus comprising:

I/O means for connection to the network;

processing means for gathering information on the
15 use made of said service by said apparatus, for processing said information to generate processed information, and for controlling said I/O means to transmit said processed information to a remote management system; and

20 storage means for storing said information and/or said processed information.

51. Apparatus according to claim 50 including clock means, said processing means being responsive to said
25 clock to gather said information with respect to time, to process said information periodically, and to cause said I/O means to transmit said processed information

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periodically to said remote management system.

52. Apparatus according to claim 50 or claim 51 including user interface means to allow a user of said apparatus access to said information and/or said processed information in said storage means.

53. Apparatus according to claim 52 wherein said user interface means comprises a computer program running on said processing means to allow a user access to said information and/or said processed information.

54. Apparatus according to claim 53 wherein said processing means is operable to gather and process said information for output to said user using machine independent instructions.

55. Apparatus according to any one of claims 50 to 54 wherein said I/O means is adapted to receive configuration data from said management system, and said processing means is operative to process said information in accordance with said configuration data.

56. A method of remotely configuring communication apparatus for communication over a network to access a service, the method comprising the steps of:

connecting said communication apparatus to said

network;

said communication apparatus automatically communicating with a remote configuration system over said network using initial configuration data;

5 said communication apparatus transmitting unique identification information to said configuration system;

at said configuration system determining configuration data for said communication apparatus;

transmitting said configuration data to said
10 communication apparatus;

storing said configuration data received from said configuration data in storage means in said communication apparatus; and

controlling subsequent communications by said
15 communication apparatus over said network using the stored configuration data.

57. A method according to claim 56 including the further steps of:

20 transmitting subsequent configuration data to said communication apparatus from said configuration system;

storing said subsequent configuration data in said storage means; and

controlling subsequent communications by said
25 communication apparatus over said network in accordance with the stored subsequent configuration data.

58. A method according to claim 57 including the steps of a user of said communication apparatus generating a request for said subsequent configuration data, and transmitting said request to said configuration system to initiate the transmission of said subsequent configuration data.

59. A method according to claim 57 wherein said subsequent configuration data is transmitted by said configuration system automatically.

60. A method according to any one of claims 56 to 59 wherein said configuration data is transmitted over said network using a permanently open control channel associated with a plurality of data/voice channels.

61. A method according to any one of claims 56 to 60 including the steps at said communication apparatus, of:
gathering information on the use of said service;
processing said information to generate summary information; and
periodically transmitting said summary information to a provider of said service.

62. A method according to claim 61 wherein said information is gathered in real time using a real time clock.

63. A method according to claim 61 or claim 62 including the step of supplying said information and/or said summary information to a user.

5 64. A method of controlling communications between a communication apparatus and a remote system over a network to access a service, the method comprising the steps at said communication apparatus, of:

gathering information on the use of said service by
10 said communication apparatus;

processing said information to generate processed information; and

transmitting said processed information to a remote management system.

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65. A method according to claim 64 wherein said information is gathered with respect to time, processed periodically, and periodically transmitted to said remote management system.

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66. A method according to claim 64 or claim 65 including the step of supplying said information and/or said processed information to a user.

25 67. Communication apparatus substantially as hereinbefore described with reference to any of the accompanying drawings.

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68. A method of controlling communication apparatus substantially as *hereinbefore* described with reference to any of the accompanying drawings.

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